Student ID: ……. Major: CE / EE

ECE3156 – SOFTWARE ENGINEERING

CO1- Test

Time: 30 minutes Total marks: 25

Instructions:

1. This question paper consists of 2 pages with 1 question only.
2. Please print all your answers in the answer sheets provided.

Question 1

Table A1 describes the activity network information of a particular software engineering organization, for a project that they are working on.

Table A1: Activity network information.

Activity	Description	Preceding Activity	Activity Time (days)
A	Requirements gathering	—	3
B	Project plan	—	7
C	Design plan	B	23
D	Resource plan	C	11
E	Quality Assurance plan	A	3
F	Test plan	B, C	9
G	Design and Test approval	B, C, E	5
H	Development	D, G	40
I	Testing & Rework	F, H	23

(a) By using the information in Table A1, draw a network diagram for the listed activities using Activity on Node (AON) method.

[3 marks]

(b) Redraw the network diagram based on the information in Table A1 using the Activity on Arrow (AOA) method.

[5 marks]

(c) With reference to part (b), compute any slack time that exists in the individual activities.

i. You need not redraw the AOA diagram. Instead, draw the necessary Earliest Start Time (EST) and Latest Finish Time (LFT) boxes on the current AOA diagram of part (b).

ii. Compute the Available Time (AT) for each activity followed with the float/slack time, if any.

[6 marks]

(d) With reference to part (b), identify all of the possible critical paths for this project.

[2 marks]

(e) Draw the corresponding Gantt chart for the activities of this project based on a waterfall cycle.

[4 marks]

(f) Compute the durations (in days) of this project.

[1 mark]

(g) Illustrate the *systematic process* (from problem to solution) of software engineering with a diagram and then explain each process stage with your own words

[4 marks]

End of Paper